

points of said interconnecting metalization structure are constructed and routed such that functionally identical electrical contact points of said interconnecting metalization structure are inter-connected and are connected with one electrical contact point or fewer electrical contact points of said top metalization structure thereby creating a reduction effect for said electrical contact points of said interconnecting metalization structure whereby the number of contact points for a particular electrical function within said electrical contact points of said top metalization structure is smaller than the number of said electrical contact points of said interconnecting metalization structure by a measurable amount whereby furthermore the sequence or adjacency of said electrical contact points of said interconnecting metalization structure is not necessarily the same as the sequence or adjacency between said electrical contact points of said top metalization structure.

49. A method for forming a top metalization system for high performance integrated circuits, comprising:
forming an integrated circuit comprising a plurality of devices formed in and on a semiconductor substrate, with an overlaying interconnecting metalization structure connected to said devices and comprising a plurality of first metal lines;

depositing an insulating, separating layer over said semiconductor substrate;

forming openings through said insulating, separating layer to expose upper metal portions of said interconnecting metalization structure;

depositing metal contacts in said openings; and

forming said top metalization system connected to said interconnecting metalization structure, wherein said top metalization system comprises a plurality of top metal lines, in one or more layers, having a width substantially greater than said first metal lines.

50. The method of claim 49 wherein said top metalization system comprises signal lines that are substantially wider than lines in said overlaying interconnecting metalization structure.

51. The method of claim 49 wherein said top metalization system comprises power buses that are substantially wider than lines in said interconnecting metalization structure.

52. The method of claim 49 wherein said top metalization system comprises ground buses that are substantially wider than lines in said interconnecting metalization structure.

53. The method of claim 49 wherein said top metalization system comprises planes that contain both signal lines and power buses that are substantially wider than lines in said interconnecting metalization structure.

54. The method of claim 49 wherein said top metalization system comprises planes that contain both signal lines and ground buses that are substantially wider than lines in said overlaying interconnecting metalization structure.

55. The method of claim 49 wherein said top metalization system comprises planes that contain both power buses and ground buses that are substantially wider than lines in said overlaying interconnecting metalization structure.

56. The method of claim 49 wherein said overlaying interconnecting metalization structure comprises electrical contact points whereby said contact points can comprise any appropriate contact material, such as but not limited to tungsten, copper (electroplated or electroless), aluminum, polysilicon, or the like.

57. The method of claim 56 wherein the size of said contact points is within the range of approximately 0.3 um. to 5.0 um.